EXPRESS TERMS
OF
PROPOSED BUILDING STANDARDS
OF THE
CALIFORNIA BUILDING STANDARDS COMMISSION

REGARDING THE CALIFORNIA BUILDING CODE,
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2

(The State agency shall draft the regulations in plain, straightforward language, avoiding technical terms as much as possible and using a coherent and easily readable style. The agency shall draft the regulation in plain English. A notation shall follow the express terms of each regulation listing the specific statutes authorizing the adoption and listing specific statutes being implemented, interpreted, or made specific. (PART 1 – ADMINISTRATIVE CODE)

LEGEND FOR EXPRESS TERMS
1. Existing California amendments or code language being modified: All such language appears in *italics*, modified language is underlined.
2. New California amendments: All such language appears *underlined and in italics*.
3. Repealed text: All such language appears in ~~strikeout~~.

EXPRESS TERMS

CHAPTER 2 – DEFINITIONS

SECTION 213

Light-Frame Construction *is a type of construction whose vertical and horizontal structural elements are primarily framed by a system of repetitive wood or light gauge steel framing members, and which does not use structural concrete as floor or roof diaphragm.*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

SECTION 1612 – COMBINATION LOADS

1612.3 Load Combinations Using Allowable Stress Design

1612.3.1 Basic load combinations. …

1612.3.2 Alternate load combinations. …

1612.3.2.1 [For BSC] Alternate basic load combinations. *In lieu of the basic load combinations specified in Section 1612.3.1, structures and portions thereof shall be permitted to be designed for the most critical effects*

resulting from the following load combinations. When using these alternate basic load combinations, a one-third increase shall be permitted in allowable stresses for all combinations including W or E but not concurrent with the duration of load increase permitted in Division III of Chapter 23.

D + L + (L_r or S)	*(12-12)*
D + L + (W or E/1.4)	*(12-13)*
D + L + W + S/2	*(12-14)*
D + L + S + W/2	*(12-15)*
D + L + S + E/1.4	*(12-16)*
0.9D ± E/1.4	*(12-16-1)*

EXCEPTIONS: *1. Crane hook loads need not be combined with roof live load or with more than three fourths of the snow load or one half of the wind load.*
2. Design snow loads of 30 psf (1.44 kN/m^2) or less need not be combined with seismic loads. Where design snow loads exceed 30 psf (1.44 kN/m^2), the design snow load shall be included with seismic loads, but may be reduced up to 75 percent where consideration of siting, configuration and load duration warrant when approved by the building official.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

Section: 1629.4.2. Seismic Zone 4 near-source factor. …

Section: 1629.4.2.1 [For BSC] Seismic Zone 4 near-source factor. *In Seismic Zone 4, each site shall be assigned a near-source factor in accordance with Table 16-S and the Seismic Source Type set forth in Table 16-U. The value of N_a used in determining C_a need not exceed 1.1 for structures complying with all the following conditions:*

1. The soil profile type is S_A, S_B, S_C or S_D.

2. ρ = 1.0.

3. Except in single-story structures, Group R, Division 3 and Group U, Division 1 Occupancies, moment frame systems designated as part of the lateral-force-resisting system shall be special moment-resisting frames.

4. The provisions in Sections 9.6a and 9.6b of AISC - Seismic Part 1 shall not apply, except for columns in one-story buildings or columns at the top story of multistory buildings.

5. None of the following structural irregularities is present: Type 1, 4 or 5 of Table 16-L, and Type 1 or 4 of Table 16-M.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1630.2.3.4 ***[For BSC] Horizontal Distribution.*** *Diaphragms constructed of untopped steel decking or wood structural panels or similar light-frame construction are permitted to be considered as flexible.*

~~**1630.2.3.4**~~ ***1630.2.3.5*** **Applicability.** Sections 1630.1.2, 1630.1.3, 1630.2.1, 1630.2.2, 1630.5, 1630.9, 1630.10 and 1631 shall not apply when using the simplified procedure.

> **EXCEPTION:** For buildings with relatively flexible structural systems, the building official may require consideration of $P\Delta$ effects and drift in accordance with Sections 1630.1.3, 1630.9 and 1630.10. Δ_s shall be prepared using design seismic forces from Section 1630.2.3.2.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1630.4.2 Vertical combinations. …

1630.4.2.1 [For BSC] Vertical combinations. *The value of R used in the design of any story shall be less than or equal to the value of R used in the given direction for the story above.*

> ***EXCEPTION:*** *This requirement need not be applied to a story where the dead weight above that story is less than 10 percent of the total dead weight of the structure.*

Structures may be designed using the procedures of this section under the following conditions:
1. The entire structure is designed using the lowest R of the lateral-force-resisting systems used, or
2. The following two-stage static analysis procedures may be used for structures conforming to Section 1629.8.3, Item 4.

> *2.1 The flexible upper portion shall be designed as a separate structure, supported laterally by the rigid lower portion, using the appropriate values of R and ρ.*
> *2.2 The rigid lower portion shall be designed as a separate structure using the appropriate values of R and ρ. The reactions from the upper portion shall be those determined from the analysis of the upper portion multiplied by the ratio of the (R/ρ) of the upper portion over (R/ρ) of the lower portion. This ratio shall not be taken less than 1.0.*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1630.8.2 Elements supporting discontinuous systems.

1630.8.2.1 General. …

1630.8.2.1.1 [For BSC] General *Where any portion of the lateral-load-resisting system is discontinuous, such as for vertical irregularity Type 4 in Table 16-L or plan irregularity Type 4 in Table 16-M, concrete, masonry, steel and wood elements (i.e. columns, beams, trusses or slabs) supporting such discontinuous systems shall have the design strength to resist the combination loads resulting from the special seismic load combinations of Section 1612.4. The Connections of such discontinued elements to the supporting members shall be adequate to transmit the forces for which the discontinuous elements were required to be designed.*

> ***EXCEPTIONS:*** *1. The quantity E_m in Section 1612.4 need not exceed the maximum force that can be transferred to the element by the lateral-force-resisting system.*
> *2. Concrete slabs supporting light-frame wood shear wall systems or light-frame steel and wood structural panel shear wall systems.*

For Allowable Stress Design, the design strength may be determined using an allowable stress increase of 1.7 and a resistance factor, Φ, of 1.0. This increase shall not be combined with the one-third stress increase permitted by Section 1612.3, but may be combined with the duration of load increase permitted in Chapter 23, Division III.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1630.8.2.2 Detailing requirements in Seismic Zones 3 and 4. …

1630.8.2.2.1 [For BSC] Detailing requirements in Seismic Zones 3 and 4. *In Seismic Zones 3 and 4, elements supporting discontinuous systems shall meet the following detailing or member limitations:*

> *1. Reinforced concrete or reinforced masonry elements designed primarily as axial-load members shall comply with Section 1921.4.4.5.*
>
> *2. Reinforced concrete elements designed primarily as flexural members and supporting other than light-frame wood shear wall systems or light-frame steel and wood structural panel shear wall systems shall comply with Sections 1921.3.2 and 1921.3.3. Strength computations for portions of slabs designed as supporting elements shall include only those portions of the slab that comply with the requirements of these Sections.*
>
> *3. Masonry elements designed primarily as axial-load carrying members shall comply with Sections 2106.1.12.4, Item 1, and 2108.2.6.2.6.*
>
> *4. Masonry elements designed primarily as flexural members shall comply with Section 2108.2.6.2.5.*
>
> *5. Steel elements designed primarily as flexural members or trusses shall have bracing for both top and bottom beam flanges or chords at the location of the support of the discontinuous system and shall comply with the requirements of AISC-Seismic Part I, Section 9.4b.*
>
> *6. Wood elements designed primarily as flexural members shall be provided with lateral bracing or solid blocking at each end of the element and at the connection location(s) of the discontinuous systems.*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 16 – STRUCTURAL DESIGN REQUIREMENTS

TABLE 16.1-N – [For BSC] STRUCTURAL SYSTEMS [1]

BASIC STRUCTURAL SYSTEM[2]	*LATERAL-FORCE-RESISTING SYSTEM DESCRIPTION*	*R*	*Ω*	*HEIGHT LIMIT FOR SEISMIC ZONES 3 AND 4 (feet)* x 304.8 for mm
1. Bearing wall system	*1. Light-framed walls with shear panels*			
	a. Wood structural panel walls for structures three stories or less	*5.5*	*2.8*	*65*
	b. All other light-framed walls	*4.5*	*2.8*	*65*
	2. Shear walls			
	a. Concrete	*4.5*	*2.8*	*160*
	b. Masonry	*4.5*	*2.8*	*160*
	3. Light steel-framed bearing walls with tension-only bracing	*2.8*	*2.2*	*65*
	4. Braced frames where bracing carries gravity load	*4.4*	*2.2*	*160*
	a. Steel	*2.8*	*2.2*	*-*
	b. Concrete[3]	*2.8*	*2.2*	*65*
	c. Heavy timber			
2. Building frame system	*1. Steel eccentrically braced frame (EBF)*	*7.0*	*2.8*	*240*
	2. Light-framed walls with shear panels.			
	a. Wood structural panel walls for structures three stories or less	*6.5*	*2.8*	*65*
	b. All other light-framed walls	*5.0*	*2.8*	*65*
	3. Shear walls			
	a. Concrete	*5.5*	*2.8*	*240*
	b. Masonry	*5.5*	*2.8*	*160*
	4. Ordinary braced frames			
	a. Steel [6]	*5 ~~5.6~~*	*2*	*35[6] ~~160~~*
	b. Concrete[3]	*5.6*	*~~2.2~~*	*-*
	c. Heavy timber	*5.6*	*2.2*	*65*
	5. Special concentrically braced frames		*2.2*	
	a. Steel	*6.4*	*2.2*	*240*

3. Moment-resisting frame system	1. Special moment-resisting frame (SMRF)			
	a. Steel	8.5	2.8	N.L.
	b. Concrete[4]	8.5	2.8	N.L.
	2. Masonry moment-resisting wall frame (MMRWF)	6.5	2.8	160
	3. ~~Concrete~~ i Intermediate moment-resisting frame (IMRF)[5]	4.5	2.8	35[6]
	a. Steel[6]	5.5	2.8	-
	b. Concrete[5]			
	4. Ordinary moment-resisting frame (OMRF)	3.5 ~~4.5~~	2.8	~~160~~ -[6]
	a. Steel[6]	3.5	2.8	-
	b. Concrete[7,8]	6.5	2.8	240
	5. Special truss moment frames of steel (STMF)			
4. Dual systems	1. Shear walls			
	a. Concrete with SMRF	8.5	2.8	N.L.
	b. Concrete with steel OMRF (Not Permitted)	4.2	2.8	160
	c. Concrete with concrete IMRF[5]	6.5	2.8	160
	d. Masonry with SMRF	5.5	2.8	160
	e. Masonry with steel OMRF (Not Permitted)	4.2	2.8	160
	f. Masonry with concrete IMRF[3]	4.2	2.8	-
	g. Masonry with masonry MMRWF	6.0	2.8	160
	2. Steel EBF			
	a. With steel SMRF	8.5	2.8	N.L.
	b. With steel OMRF (Not Permitted)	4.2	2.8	160
	3. Ordinary braced frames (Not Permitted)			
	a. Steel with steel SMRF	6.5	2.8	N.L.
	b. Steel with steel OMRF	4.2	2.8	160
	c. Concrete with concrete SMRF[3]			-
	d. Concrete with concrete IMRF[3]			-
	4. Special concentrically braced frames	7.5	2.8	N.L.
	a. Steel with steel SMRF	4.2	2.8	160
	b. Steel with steel OMRF (Not Permitted)			
	5. Steel IMRF (Not permitted)			
5. Cantilevered column building systems	1. Cantilevered column elements	2.2	2.0	35[7]
6. Shear wall-frame interaction systems	1. Concrete[8]	5.5	2.8	160
7. Undefined systems	See Section 1629.6.7 and 1629.9.2	-	-	-

N.L.– no limit

[1] See Section 1630.4 for combination of structural systems.
[2] Basic structural systems are defined in Section 1629.6.
[3] Prohibited in Seismic Zones 3 and 4.
[4] Includes precast concrete conforming to Section 1921.2.7.
[5] Prohibited in Seismic Zones 3 and 4, except as permitted in Section 1634.2.
[6] Unless otherwise approved by the enforcement agency, in Seismic Zone 4 :
[6.1] Steel IMRF are permitted for buildings 35 ft. or less in height and the dead load of the roof, walls or floors not exceeding 35 psf each; or for single-story buildings 60 ft. or less in height with dead load of the roof or walls not exceeding 15 psf each where the

moment joints of field connections are constructed of bolted end plates; or single-family dwellings using light frame construction with R = 3.0 and Ω_o = 2.2.

[6.2] Steel OMRF are permitted for buildings 35 ft or less in height with the dead load of the roof, walls or floors not exceeding 15 psf each; or single-story buildings 60 ft or less in height with the dead load of the roof or walls not exceeding 15 psf each and where the moment joints of field connections are constructed of bolted end plates.

[6.3] Steel Ordinary Braced Frames are permitted for buildings 35 ft or less in height; or penthouse structures; or single-story buildings 60 ft or less in height with the dead load of the roof or walls not exceeding 15 psf. each.

[7] Total height of the building including cantilevered columns.

[8] Prohibited in Seismic Zones 2A, 2B, 3 and 4. See Section 1633.2.7.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 17 – STRUCTURAL TESTS AND INSPECTIONS

Section 1701.5 …

*5.2.1 **[For BSC] Lateral force resisting steel frames.** During the welding of lateral force resisting steel frames. In addition to Item 5.1 requirements, nondestructive testing as required by Section 1703 of this code.*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

SECTION 1702 -- STRUCTURAL OBSERVATION…

SECTION 1702.1 –[For BSC] STRUCTURAL OBSERVATION

Structural observation shall be provided in Seismic Zone 3 or 4 when one of the following conditions exists:

1. The structure is defined in Table 16-K as Occupancy Category I, II or III,
2. The structure is required to comply with Section 403
3. The structure is in Seismic Zone 4 and a lateral design is required for the entire structure.

***EXCEPTION:** One- and two-story wood framed Group R, Division 3, B, F, M and S Occupancies provided the adjacent grade is not steeper than 1 unit vertical in 10 units horizontal (10% sloped).*

4. When so designated by the architect or engineer of record, or
5. When such observation is specifically required by the building official.

The owner shall employ the engineer or architect responsible for the structural design, or another engineer or architect designated by the engineer or architect responsible for the structural design to perform structural observation as defined in Section 220.

The owner or owner's representative shall coordinate and call a pre-construction meeting between the engineer or architect responsible for the structural design, structural observer, contractor, affected

subcontractors and deputy inspectors. The structural observer shall preside over the meeting. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first report submitted to the building official.

Observed deficiencies shall be reported in writing to the owner's representative, special inspector, contractor and the building official. Upon the form prescribed by the building official, the structural observer shall submit to the building official a written statement at each significant construction stage stating that the site visits have been made and identifying any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved. A final report by the structural observer which states that all observed deficiencies have been resolved is required before acceptance of the work by the building official.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

SECTION 1703 NONDESTRUCTIVE TESTING…

SECTION 1703.1 [For BSC] NONDESTRUCTIVE TESTING

In Seismic Zones 3 and 4, welded connections between the primary members of lateral force resisting frames, which are subject to net tensile forces shall be tested by nondestructive methods in accordance with AISC-Seismic Part I Section 16 for compliance with approved standards and job specifications. This testing shall be a part of the special inspection requirements of Section 1701.5. A program for this testing shall be established by the person responsible for structural design and as shown on plans and specifications.

As a minimum, this program shall include the following:

1. *All complete penetration groove welds contained in joints and splices shall be tested 100 percent either by ultrasonic testing or by radiography.*

   ***EXCEPTIONS:** 1. when approved, nondestructive testing rate for an individual welder or welding operator may be reduced to 25 percent, provided the reject rate is demonstrated to be 5 percent or less of the welds tested for the welder or welding operator. A sampling of at least 40 completed welds for a job shall be made for such reduction evaluation. Reject rate is defined as the number of welds containing rejectable defects divided by the number of welds completed. For evaluating reject rate of continuous welds over 3 feet (914 mm) in length where the effective throat thickness is 1 inch (25 mm) or less, each 12-inch increment (305 mm) or fraction thereof shall be considered as one weld. For evaluating the reject rate on continuous welds over 3 feet (914 mm) in length where the effective throat thickness is greater than 1 inch (25 mm), each 6 inches (152 mm) length of fraction thereof shall be considered one weld.*

2. *For complete penetration groove welds on materials less than 5/16 inch (7.9 mm) thick, nondestructive testing is not required; for this welding, continuous inspection is required.*

3. *When approved by the building official and outlined in the project plans and specification, this nondestructive ultrasonic testing may be performed in the shop of an approved fabricator utilizing qualified test techniques in the employment of the fabricator.*

2. Partial penetration groove welds when used in column splices shall be tested either by ultrasonic testing or radiography when required by the plans and specifications. For partial penetration groove welds when used in column splices, with an effective throat less than ¾ inch (19.1 mm) thick, nondestructive testing is not required; for this welding, continuous special inspection is required.

3. Base metal thicker than 1 ½ inches (38 mm), when subjected to through-thickness weld shrinkage strains, shall be ultrasonically inspected for discontinuities directly behind such welds after joint completion.

Any material discontinuities shall be accepted or rejected on the basis of the defect rating in accordance with the (larger reflector) criteria of approved national standards.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 19 - CONCRETE

SECTION 1915 - FOOTINGS
1915.0 Notations …
1915.1 Scope …
1915.2 Loads and reactions. …
1915.2.2 …

1915.2.2.1 [For BSC] *Base area of footing or number and arrangement of piles shall be determined from the external forces and moments (transmitted by footing to soil or piles) and permissible soil pressure or permissible pile capacity selected through principles of soil mechanics. External forces and moments are those resulting from the load combinations of Section 1612.3.*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1928.1.2.3 Basic combinations. …

1928.1.2.3.1 [For BSC] Basic combinations. *When permitted by Section 1928.1, structures, components and foundations shall be designed so that their design strength exceeds the effects of the factored loads in the following combinations:*

1. 1.4D
2. 1.2D + 1.6L + 0.5(L_r or S or R)
3. 1.2D + 1.6(L_r or S or R) + (0.5L or 0.8W)
4. 1.2D + 1.3W + 0.5L + 0.5(L_r or S or R)
5. 1.2D ± 1.0E + (0.5L or 0.2S)
6. 0.9D ± (1.3W or 1.0E)

EXCEPTIONS: *1. The load factor on L in combinations 3, 4 and 5 shall equal 1.0 for garages, areas occupied and places of public assembly, and all areas where the live load is greater than 100 lb./ft.^{2}*

(pounds-force per square foot) (4.79 kPa).
2. Each relevant strength limit state shall be considered. The most unfavorable effect may occur when one or more of the contributing loads are not acting.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]
SECTION 2204-DESIGN METHODS

Design shall be by one of the following methods.

2204.1 Load and Resistance Factor Design. …

2204.1.1 [For BSC] Load and Resistance Factor Design. *Steel design based on load and resistance factor design method shall resist the factored load combinations of section 1612.2 in accordance with the applicable requirements of section 2205.*

2204.2 Allowable Stress Design. …

2204.2.1 [For BSC] Allowable Stress Design. *Steel design based on allowable stress design methods shall resist the factored load combinations of section 1612.3 in accordance with the applicable requirements of section 2205.*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 22*B*
STEEL

DIVISION I – DESIGN AND CONSTRUCTION PROVISIONS

See Chapter 22, STEEL, Division I for content of this division.

DIVISION II – DESIGN STANDARDS FOR LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

See Chapter 22, STEEL, Division II for content of this division.

DIVISION III – DESIGN STANDARD FOR SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN

See Chapter 22, STEEL, Division III for content of this division.

Division IV — SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS

Based on Seismic Provisions for Structural Steel Buildings, of the American Institute of Steel Construction.

(Part I, dated April 15, 1997
and Supplement No. 2, dated November 10, 2000.)

2210B — ADOPTION

Except for the modifications as set forth in Sections 2211B and 2212B of this division and the requirements of the Building Code, the seismic design, fabrication, and erection of structural steel shall be in accordance with the Seismic Provisions for Structural Steel Buildings, April 15, 1997 published by the American Institute of Steel Construction, 1 East Wacker Drive, Suite 3100, Chicago, IL 60601, as if set out at length herein. The adoption of Seismic Provisions for Structural Steel Buildings in this Division, hereinafter referred to as AISC-Seismic, shall include Parts I (LRFD), and Supplement No. 2, dated November 10, 2000.

Where other codes, standards, or specifications are referred to in this specification, they are to be considered as only an indication of an acceptable method or material that can be used with the approval of the Building Official.

2211B – DESIGN METHODS

When the load combinations from Section 1612.2 for LRFD are used, structural steel buildings shall be designed in accordance with Chapter 22 Division II (AISC-LRFD) and Part I of AISC-Seismic as modified by this Division.

2212B - AMENDMENTS

The AISC-Seismic adopted by this Division apply to the seismic design of structural steel members except as modified by this Section.
The following terms that appear in AISC-Seismic shall be taken as indicated in the 1997 Uniform Building Code.

AISC-Seismic	***1997 Uniform Building Code***
Seismic Force Resisting System	*Lateral Force Resisting System*
Design Earthquake	*Design Basis Ground Motion*
Load Combinations Eqs. (4-1) and (4-2)	*Chapter 16 Eqs. (12-17) and (12-18) respectively*
LRFD Specification Section Eqs. (A4-1) through (A4-6)	*Chapter 16 Eqs. (12-1) through (12-6) respectively*
$\Omega_o Q_E$	E_m

1. Part I, Sec. 1. of the AISC Seismic Provisions is revised as follows:

1. SCOPE

These provisions are intended for the design and construction of structural steel members

and connections in the Seismic Force Resisting Systems in buildings for which the design forces resulting from earthquake motions have been determined on the basis of various levels of energy dissipation in the inelastic range of response. These provisions shall apply to buildings in Seismic Zone 2 with an importance factor I greater than one, in Seismic Zones 3 and 4 or when required by the Engineer of Record.

These provisions shall be applied in conjunction with, Chapter 22, Division II, hereinafter referred to as the LRFD Specification. All members and connections in the Lateral Force Resisting System shall have a design strength as provided in the LRFD Specification to resist load combinations 12-1 through 12-6 (in Chapter 16) and shall meet the requirements in these provisions.

Part I includes a Glossary, which is specifically applicable to this Part, and Appendix S.

2. Part I, Sec. 4.1. of the AISC Seismic Provisions is deleted and replaced as follows:

4.1 Loads and Load Combinations

The loads and load combinations shall be those in Section 1612.2 except as modified throughout these provisions.

E_h is the horizontal component of earthquake load E required in Chapter 16. Where required in these provisions, an amplified horizontal earthquake load $\Omega_o E_h$ shall be used in lieu of E_h as given in the load combinations below. The term Ω_o is the system overstrength factor as defined in chapter 16. The additional load combinations using amplified horizontal earthquake load are:

$$1.2\ D + 0.5\ L + 0.2S + \Omega_o E_h \qquad (4\text{-}1)$$

$$0.9\ D \pm \Omega_o E_h \qquad (4\text{-}2)$$

Exception: the load factor on L in load combination 4-1 shall be equal to 1.0 for garages, areas occupied ass places of public assembly and all areas where the live load is greater than 100 psf.

Division V — Seismic Provisions for Structural Steel Buildings For Use With Allowable Stress Design

Based on Seismic Provisions for Structural Steel Buildings, of the American Institute of Steel Construction.

(Part III, dated April 15, 1997 and Supplement No. 2, dated November 10, 2000.)

2213B — ADOPTION

Except for the modifications as set forth in Sections 2211B and 2212B of this division and the requirements of the Building Code, the seismic design, fabrication, and erection of structural steel shall be in accordance with the Seismic Provisions for Structural Steel Buildings, April 15, 1997 published by the American Institute of Steel Construction, 1 East Wacker Drive, Suite 3100, Chicago, IL 60601, as if set out at length herein. The adoption of Seismic Provisions for Structural Steel Buildings in this Division, hereinafter referred to as AISC-Seismic, shall include Parts III (ASD) and Supplement No. 2, dated November 10, 2000.

Where other codes, standards, or specifications are referred to in this specification, they are to be considered as only an indication of an acceptable method or material that can be used with the approval of the Building Official.

2214B – DESIGN METHODS

When the Allowable Stress Design (ASD) method is used for design of members, structural steel buildings shall be designed in accordance with Chapter 22 Division III (AISC-ASD) and Part III of AISC-Seismic as modified by this Division.

2215B - AMENDMENTS

The AISC-Seismic adopted by this Division apply to the seismic design of structural steel members except as modified by this Section.

The following terms that appear in AISC-Seismic shall be taken as indicated in the 1997 Uniform Building Code.

AISC-Seismic	***1997 Uniform Building Code***
Seismic Force Resisting System	*Lateral Force Resisting System*
Design Earthquake	*Design Basis Ground Motion*
Load Combinations Eqs. (4-1) and (4-2)	*Chapter 16 Eqs. (12-17) and (12-18) respectively*
$\Omega_o Q_E$	E_m

1. Part III, Sec. 1. of the AISC Seismic Provisions is revised as follows:

1. SCOPE

These provisions are intended for the design and construction of structural steel members and connections in the Seismic Force Resisting Systems in buildings for which the design forces resulting from earthquake motions have been determined on the basis of various levels of energy dissipation in the inelastic range of response. These provisions shall apply to buildings in Seismic Zone 2 with an importance factor I greater than one, in Seismic Zones 3 and 4 or when required by the Engineer of Record.

These provisions shall be applied in conjunction with, Chapter 22, Division III, hereinafter referred to as the ASD Specification. All members and connections in the Lateral Force Resisting System shall have a design strength as provided in the ASD Specification to resist load combinations 12-1 through 12-6 (in Chapter 16) and shall meet the requirements in these provisions.

Part I includes a Glossary, which is specifically applicable to this Part, and Appendix S.

2. Part III, Sec. 4.1. of the AISC Seismic Provisions is deleted and replaced as follows:

2.1 Loads and Load Combinations

The loads and load combinations shall be those in Section 1612.2 except as modified

throughout these provisions.

E_h is the horizontal component of earthquake load E required in Chapter 16. Where required in these provisions, an amplified horizontal earthquake load $\Omega_o E_h$ shall be used in lieu of E_h as given in the load combinations below. The term Ω_o is the system overstrength factor as defined in chapter 16. The additional load combinations using amplified horizontal earthquake load are:

$$1.2\ D + 0.5\ L + 0.2S + \Omega_o E_h \qquad (4\text{-}1)$$

$$0.9\ D \pm \Omega_o E_h \qquad (4\text{-}2)$$

Exception: the load factor on L in load combination 4-1 shall be equal to 1.0 for garages, areas occupied ass places of public assembly and all areas where the live load is greater than 100 psf.

DIVISION VI – Load and Resistance Factor Design Specification for Cold-formed Steel Structural Members

See Chapter 22, STEEL, Division VI for content of this division.

DIVISION VII – Specification for Design of Cold-formed Steel Structural Members

See Chapter 22, STEEL, Division VII for content of this division.

DIVISION VIII – Lateral Resistance for Steel Stud Wall Systems

See Chapter 22, STEEL, Division VIII for content of this division.

Division IX-Open Web Steel Joists

See Chapter 22, STEEL, Division IX for content of this division

Division X-Design Standard for Steel Storage Racks

See Chapter 22, STEEL, Division X for content of this division

Division XI-Design Standard for Structural Applications of Steel Cables for Buildings

See Chapter 22, STEEL, Division XI for content of this division

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 23 – WOOD

SECTION 2315 – WOOD SHEAR WALLS AND DIAPHRAGMS

2315.5 Wood Shear Walls and Diaphragms in Seismic Zones 3 and 4…

2315.5.6 [For BSC] Hold-down connectors. *Hold-down connector bolts into wood framing require steel plate washers in accordance with Table 23-II-L. Hold-downs shall be re-tightened just prior to covering the wall framing.*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

Table 23-II-L [For BSC] MINIMUM SIZE STEEL PLATE WASHERS USED WITH HOLDOWN CONNECTORS

Bolt Size	***Plate Size***
x 25.4 for mm	*x 25.4 for mm*
1/2 in [4]	*3/16" x 2" x 2"*
5/8 in	*1/4" x 2-1/2" x 2-1/2"*
3/4 in	*5/16" x 2-3/4" x 2-3/4"*
7/8 in	*5/16" x 3" x 3"*
1 in	*3/8" x 3-1/2" x 3-1/2"*

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 23 – WOOD

Division III – DESIGN SPECIFICATIONS FOR ALLOWABLE STRESS DESIGN OF WOOD BUILDINGS

Part I – ALLOWABLE STRESS DESIGN OF WOOD

This standard, with certain exceptions, is the ANSI/NFoPA ~~NDS-91~~ NDS-97 National Design Specification for Wood Construction of the American Forest and Paper Association, ~~Revised 1991~~ 1997 Edition, and the Supplement to the ~~1991~~ 1997 Edition, National Design Specification, adopted by reference.

The National Design Specification for Wood Construction, ~~Revised 1991~~ 1997 Edition, and supplement are available from the American Forest and Paper Association, 1111 19th Street, NW, Eighth Floor, Washington, DC, 20036.

SECTION 2316 - DESIGN SPECIFICATIONS

2316.1 Adoption and Scope. The National Design Specification for Wood Construction, ~~Revised 1991~~ 1997 Edition (NDS), which is hereby adopted as a part of this code, shall apply to the design and …

2316.2 Amendments.

12. ~~Sec 3.2.3.2~~ Sec. 3.2.3.3. Add to end of paragraph as follows: Cantilevered portions of beams less than 4 inches (102 mm) in nominal thickness shall not be notched unless the reduced section properties and lumber defects are considered in the design. For effects of notch on shear strength, see Section 3.4.4

13. Sec. 3.3.2. Add a last paragraph as follows: …

~~**14. Sec. 3.3.4. Add a section as follows:**~~

~~3.4.4.5 When girders, beams or joists are notched at points of support on the compression side, they shall meet design requirements for the net section in bending and in shear. The actual shear stress as such point shall be calculated as follows:~~

~~f_v = 3V divided by 2b[d – [[d – d"] / d] e]~~

~~WHERE:~~

~~d = total depth of beam.~~

~~**d' = actual depth of beam at notch.**~~

~~e = distance notch extends inside the inner edge of support.~~

~~V = shear force.~~

~~Where e exceeds d', the actual shear stress for the notched on the compression side shall be calculated as follows:~~

~~F_v = 3V divided by 2bd'~~

~~26. Sec. 13.2.1. Delete and substitute as follows:~~

~~13.2.1 Test for design values. Tests to determine design values for metal plate connectors in lateral withdrawal, net section shear and net section tension shall be conducted in accordance with the test and evaluation procedures in ANSI/TPI 1-1995. Design values determined in accordance with these test procedures shall be multiplied by all applicable adjustment factors (see Table 7.3..1) to obtain allowable design values.~~

~~27. NDS Supplement Table 5A. Add combinations and design values as follows:~~ …

Delete Table of Design Values in Pounds Per Square Inch

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]